

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) EP 0 854 648 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
15.12.1999 Bulletin 1999/50

(51) Int. Cl.<sup>6</sup>: H04N 7/08

(43) Date of publication A2:  
22.07.1998 Bulletin 1998/30

(21) Application number: 98100544.0

(22) Date of filing: 14.01.1998

(84) Designated Contracting States:  
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC  
NL PT SE  
Designated Extension States:  
AL LT LV MK RO SI

(72) Inventors:  
• Walker, Kent G.  
Escondido, California 92025 (US)  
• Nuber, Ray  
Torrance, California 90505 (US)

(30) Priority: 16.01.1997 US 35395 P  
02.07.1997 US 887046

(74) Representative:  
Hoeger, Stellrecht & Partner  
Uhlandstrasse 14 c  
70182 Stuttgart (DE)

(71) Applicant:  
General Instrument Corporation  
Horsham, Pennsylvania 19044 (US)

(54) Waveform generator for insertion of data into digital television signals

(57) A digital waveform generator complies with different vertical blanking interval (VBI) standards, and is inserted into VBI portions of a digital component video signal. A buffer receives symbols carrying VBI data for a particular VBI service according to a user data syntax, which identifies a television line into which the VBI data is to be inserted. A symbol processor is responsive to information provided by the syntax. This information indicates the number of pixels represented per symbol, a symbol transition time, and the number of symbols

carrying data to be inserted into the VBI portion. The symbol processor provides the VBI data in a format according to the particular VBI service. A timing circuit is responsive to a start time provided by the syntax for inserting the VBI data. A level control circuit adjusts the level of the VBI data prior to insertion into the VBI portion in response amplitude values provided by the syntax.

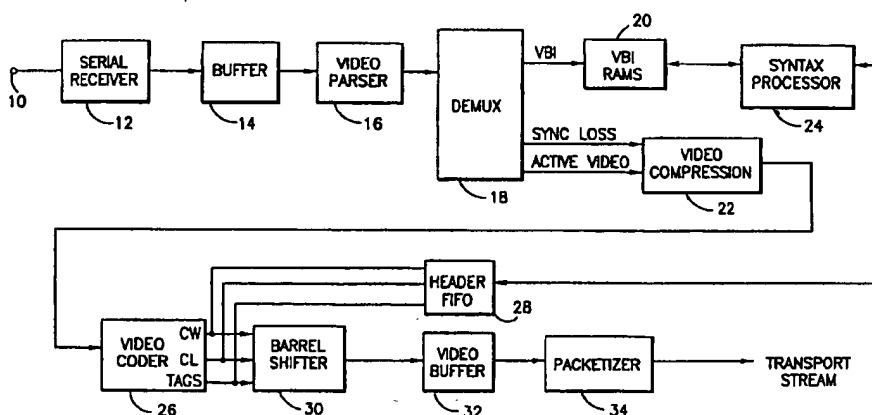


FIG. 1

EP 0 854 648 A3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 98 10 0544

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P, A	WO 97 01930 A (GENERAL INSTRUMENT CORPORATION OF DELAWARE) 16 January 1997 (1997-01-16) * page 4, line 4 - page 5, line 23 * * page 15, line 1 - line 28 * * figures 1,3,4 *	1,12	H04N7/08
A	& CA 2 179 322 A (GENERAL INSTRUMENT CORPORATION OF DELAWARE) * the whole document *	1,12	
A	WO 95 15660 A (SCIENTIFIC-ATLANTA) 8 June 1995 (1995-06-08) * page 27, line 17 - page 30, line 19 *	1,12	
A	EP 0 740 474 A (OKI ELECTRIC INDUSTRY) 30 October 1996 (1996-10-30) * abstract * * column 7, line 24 - column 8, line 7 *	1,12	
E	WO 98 05167 A (TIERNAN COMMUNICATIONS) 5 February 1998 (1998-02-05) * the whole document *	1-21	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H04N
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27 October 1999	Examiner Berwitz, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 10 0544

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-10-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9701930 A	16-01-1997	US 5699124 A	16-12-1997
		AU 6339896 A	30-01-1997
		CA 2179322 A	29-12-1996
		CN 1200220 A	25-11-1998
		EP 0880854 A	02-12-1998
		JP 9102941 A	15-04-1997
WO 9515660 A	08-06-1995	US 5493339 A	20-02-1996
		AU 679824 B	10-07-1997
		AU 1333695 A	19-06-1995
		BR 9408234 A	26-08-1997
		CA 2177563 A	08-06-1995
		CN 1142878 A	12-02-1997
		CZ 9601547 A	12-03-1997
		DE 732033 T	11-09-1997
		EP 0732033 A	18-09-1996
		HU 75274 A	28-05-1997
		JP 9506223 T	17-06-1997
		PL 315201 A	14-10-1996
EP 740474 A	30-10-1996	JP 8298649 A	12-11-1996
		US 5796441 A	18-08-1998
WO 9805167 A	05-02-1998	AU 3899697 A	20-02-1998
		EP 0916226 A	19-05-1999